

J. A. FRANKLIN.
PEANUT BLANCHING MACHINE.
APPLICATION FILED MAR. 15, 1917.

Patented May 29, 1917.
3 SHEETS—SHEET 1.

1,228,103.

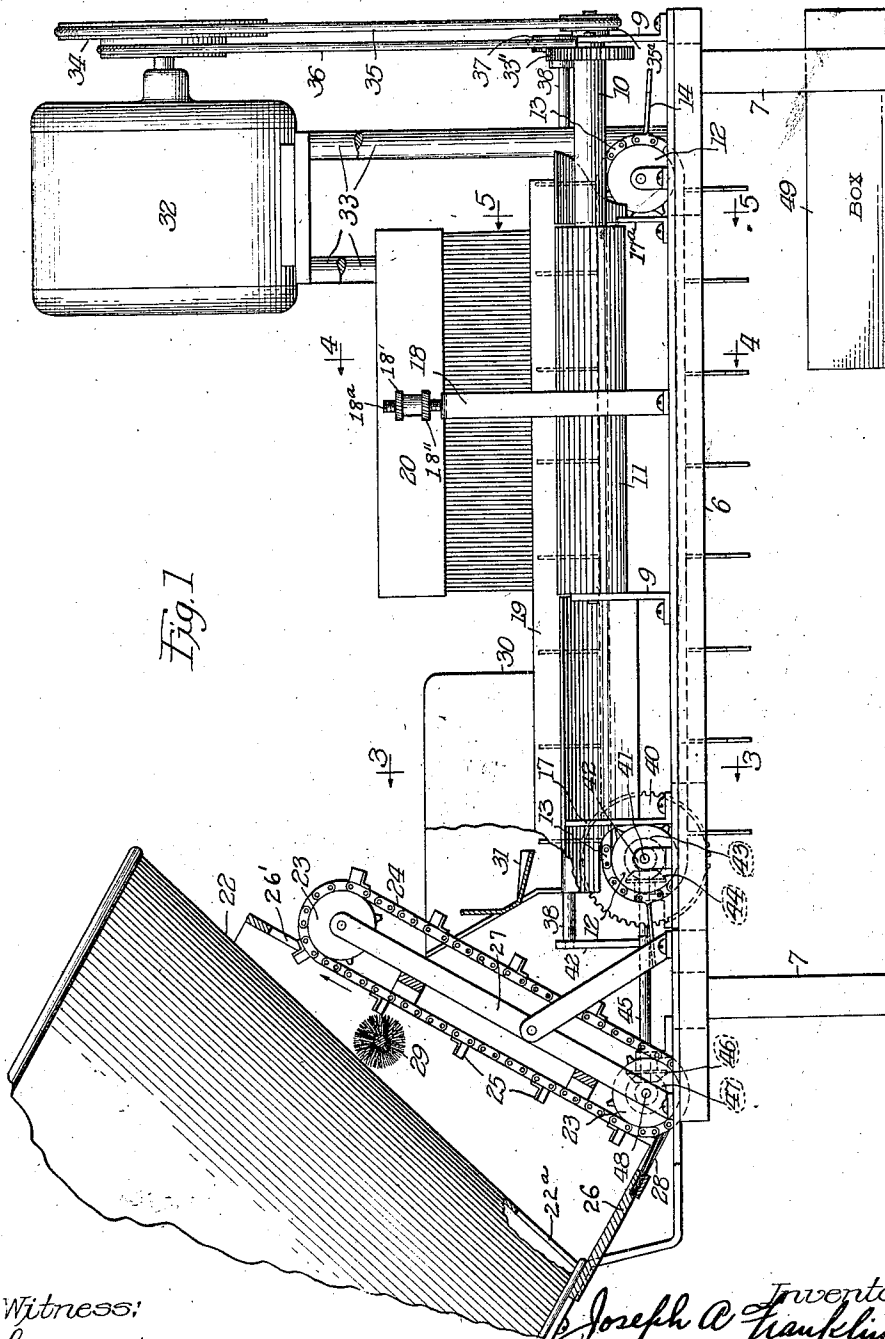


Fig. 1

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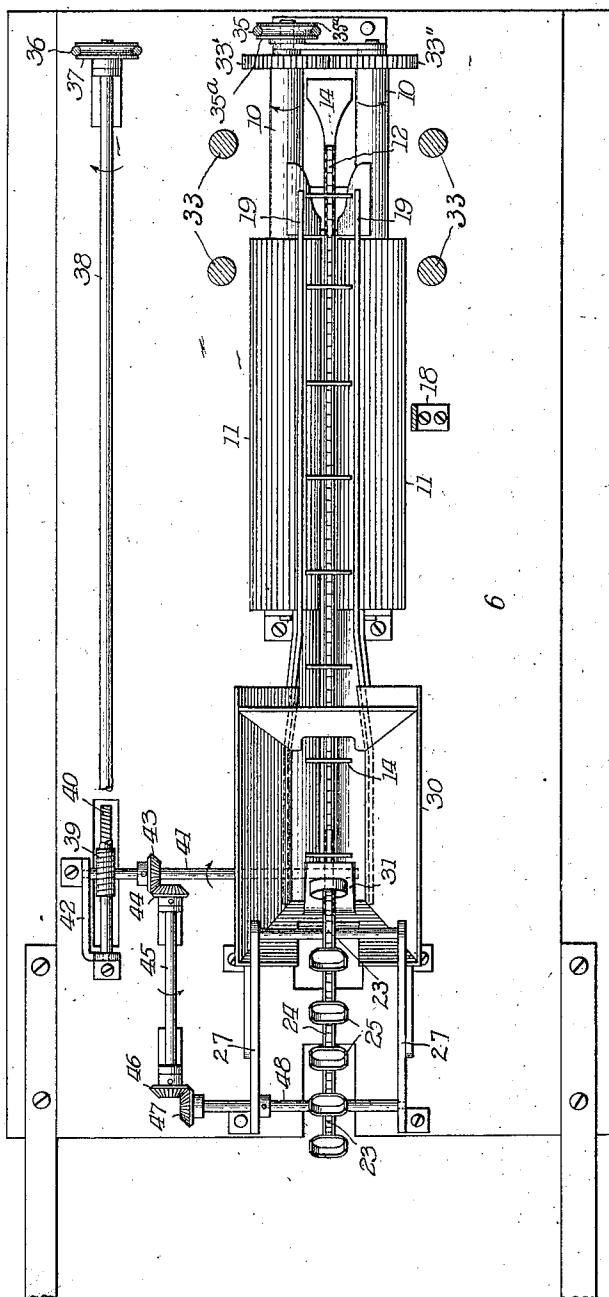
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3 SHEETS—SHEET 2.

Fig. 2



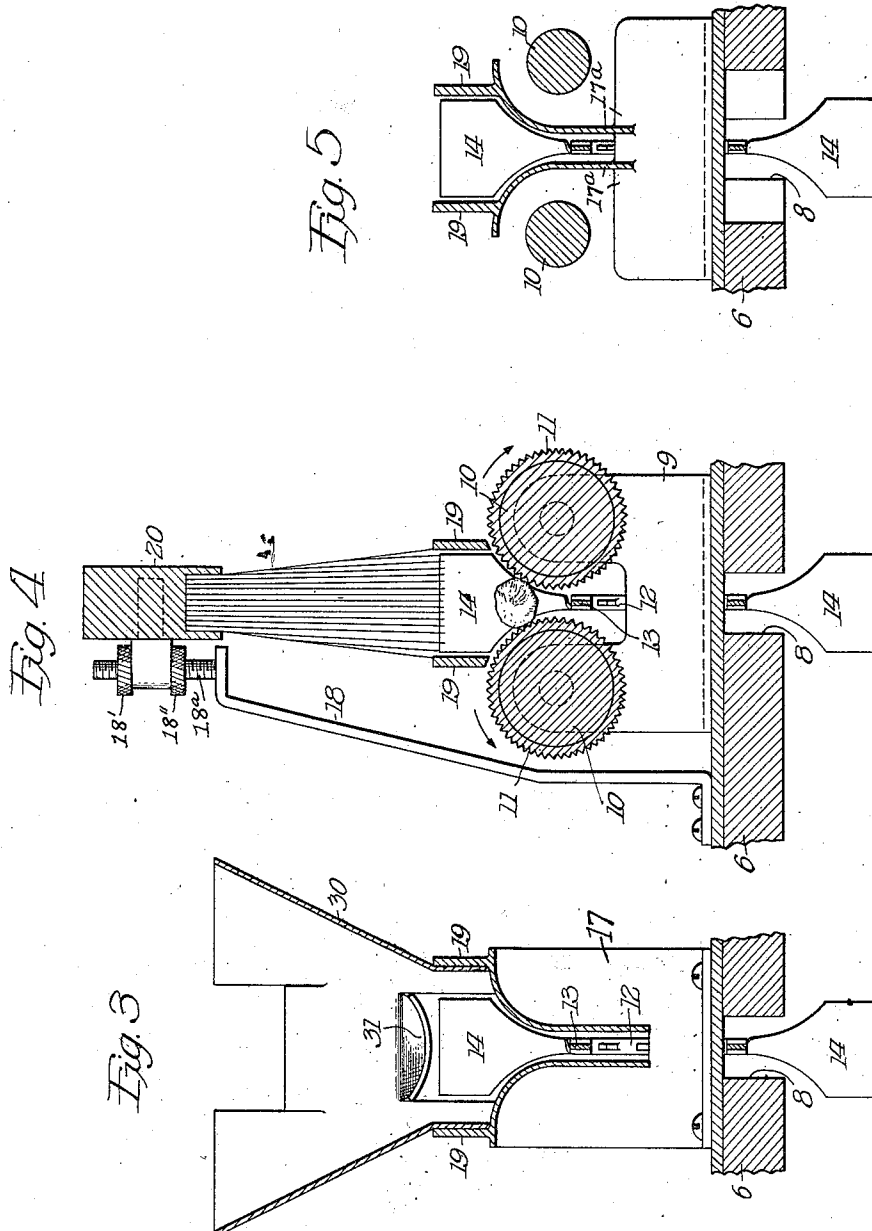
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UNITED STATES PATENT OFFICE.

JOSEPH A. FRANKLIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO FRANKLIN AUTO PEANUT
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PEANUT-BLANCHING MACHINE.

1,228,103.

Specification of Letters Patent.

Patented May 29, 1917.

Application filed March 15, 1917. Serial No. 154,926.

To all whom it may concern:

Be it known that I, JOSEPH A. FRANKLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Peanut-Blanching Machines, of which the following is a specification.

This invention relates to machines for blanching peanuts, the operation of blanching consisting in the removal from the nut of the skin which envelops the same within the husk or shell. In the preparation of these nuts in salted or otherwise treated form for the market it is, of course, essential to remove the skin, and this, so far as I am aware, has usually been done by hand and is, of course, a long and tedious operation. The object of the present invention is to provide a practical machine for blanching the nuts, which shall perform the operation with a minimum breakage of the nuts and shall save much of the time and labor heretofore involved in the manual performance of this work. The chief distinguishing feature of the machine resides in the mechanism by which the nuts, after having been thoroughly dried, but before they are roasted, are subjected to a tumbling operation as they are passed through the machine by which the skins, previously loosened in the drying, are broken and caused to fall away from the kernels of the nuts.

My invention, its mode of operation and the advantages inherent herein will all be readily understood from the following description when considered in connection with the accompanying drawings forming a part of this specification, in which—

Figure 1 is a side elevation, partly broken out and in section, of the complete machine;

Fig. 2 is a top plan view, with the motor, brush and hopper omitted, and some of the upright supports shown in horizontal section; and

Figs. 3, 4 and 5 are enlarged vertical sections taken on the lines 3—3, 4—4 and 5—5, respectively of Fig. 1.

Referring to the drawings, 6 designates a table or platform supported on legs 7 and formed with a longitudinal slot 8. In standards 9 mounted on the table are journaled a pair of tumbling rolls 10, each located above and slightly to one side of the slot 8. The

working portions of these rolls are surfaced with a friction material such as rubber, cork, wood-fiber, or the like that is preferably longitudinally corrugated as indicated at 11. Above and extending lengthwise of the slot 8 is mounted on sprockets 12 an endless conveyer chain 13 on the outer side of certain spaced links of which are mounted flights 14. Secured to the top of the table are a pair of brackets 17 and 17^a which serve to support a pair of horizontal strips 19 located just above and parallel with the tumbling rolls 11, and constituting with the latter the side walls of the passage or chute through which the nuts are carried by the conveyer chain 13. 18 designates a standard mounted on the table 6, on the upper end of which standard is mounted, with capacity for vertical adjustment by means of a threaded rod 18^a and nuts 18' and 18'', a brush 20, the lower edge of which extends between the upper edge of portions of the side walls 19 and constitutes a top wall of the tumbling chute.

At the rear end of the platform 6 is mounted a main hopper 22 adapted to contain the nuts to be blanched, this hopper having an opening 22^a near its lower end through which the nuts pass onto the inclined bottom of an auxiliary hopper 26 lying in front of the main hopper. A pair of sprocket wheels 23 journaled in and between brackets 27 carry a conveyer chain 24, the upwardly traveling or working lap of which lies in a slot 26' formed in the front wall of the auxiliary hopper 26. This chain 24 carries on its outer or working surface a series of spaced buckets 25 that are open on their upper sides and are each adapted to pick up and carry a single nut. 28 designates a stationary brush that engages the chain 24 at a point opposite the lower sprocket 23 and guards the lower end of the slot 26' against escape of nuts therethrough, and 29 designates a rotary brush that lightly sweeps over the buckets 25 to prevent overloading of the latter and any possible jamming at the upper end of the slot 26'. The unblanched nuts in the bottom of the auxiliary hopper are picked up one at a time by the buckets 25 of the conveyer 24 and carried upwardly and delivered into a guide chute 30 that has flaring side walls, as shown in Fig. 3, falling onto a concave baffle 31,

from which they roll and drop down onto the main conveyer 13 between the flights 14 of the latter.

The driving mechanism conveniently comprises an electric motor 32 mounted on posts 33 above the delivery end of the tumbling rolls. On the armature shaft of the motor is a double grooved pulley 34 from which a belt or cord 35 extends around a pulley 35^a on the forward end of one of the tumbling rolls 10. These latter are geared to rotate in opposite directions by a pair of spur gears 33' and 33'' (Fig. 2). The rolls are thus driven at a high speed in opposite directions, and preferably in such a manner that their upper sides rotate away from each other, although the rolls may be driven in the opposite direction with good results. From the pulley 34 a second belt or cord 36 leads over a pulley 37 fast on a horizontal shaft 38 that is mounted on the table 6 and carries a worm 39 meshing with a worm wheel 40, this latter being fast on a counter-shaft 41 journaled in brackets 42, said counter-shaft having fast thereon the rear sprocket 12 of the main conveyer. The feed conveyer 24 is operated from the counter shaft 41 by a bevel pinion 43 on said shaft engaging a bevel pinion 44 on one end of a way-shaft 45, the other end of said shaft 45 carrying a bevel pinion 46 engaging a similar pinion 47 on one end of a shaft 48 on which the lower sprocket 23 of the feed conveyer is mounted.

In the operation of the machine, the tumbling rolls are rotated at a high speed and the nuts to be blanched are carried one by one by the feed conveyer 24 into the transfer chute 30, whence they are delivered onto the main conveyer 13 by which latter they are slowly advanced through the tumbling chamber, the side walls of which are constituted principally by the tumbling rolls, the top wall by the lower free edge of the brush, and the bottom wall by the traveling upper lap of the conveyer. It will be noted by reference to Figs. 1 and 4 that the flights 14 of the main conveyer chain are disposed at a right angle to the latter and extend above the tops of the rolls. In fact, preferably and as herein shown, they extend to the lower or working surface of the brush 20, and their side edges are shaped to conform with and lie closely adjacent to the inner upper portions of the tumbling rolls and the side walls 19, whereby the tumbling chute or passageway is in effect divided lengthwise into a plurality of sections, insuring a substantially uniform distribution of the nuts lengthwise of the chute during the tumbling operation. The rough friction surfaces of the rolls operate to vigorously tumble the nuts in this tumbling chamber or passageway, bouncing them back and forth between the walls of

the latter, the skins of the nuts, which have been previously loosened and rendered brittle by the drying operation, being cracked and broken by contact with the rolls, the side walls 19, the flights 14, and the lower surface of the brush, so that by the time each nut has traveled through this passageway it is denuded of the skin, or blanched; and the blanched nuts and skins together are delivered to a suitable receptacle such as a traveling belt, or a box such as is indicated at 49 in Fig. 1, whence they may be subjected to a winnowing operation to separate the kernels and the skins. Of course, in any given batch of stock there will always be a small percentage of nuts the skins of which wholly or partially adhere to the kernels to such an extent that they cannot be loosened by the described tumbling operation. These are picked out and either blanched by hand or discarded. Practical tests and commercial use of the machine for over a year have, however, demonstrated that a very high percentage of normal or round nuts are effectively blanched by the machine, which thereby effects a large saving of the hand labor heretofore required for this work. The brush 20, the vertically disposed bristles of which form the top wall of the tumbling chamber, constitutes an important element of the apparatus, since I have found by experiment that a hard or unyielding top wall produces an objectionably high percentage of broken kernels, whereas, when a more or less locally yielding or soft top wall with a rough surface, such as that afforded by the closely packed free ends of the bristles of the brush, is employed, there is only a very small percentage of broken kernels. The vertical adjustability of the brush enables it to be set at the proper height, as determined by experiment with any given batch of stock, to obtain the best results.

While I have shown and described one practical and workable embodiment of my invention, it is obvious that the principle thereof may be embodied in apparatus differing specifically more or less from that herein shown. Hence, I do not limit the invention to specific details of the apparatus shown and described, except to the extent indicated in specific claims.

I claim:

1. In a nut blanching machine, the combination of a pair of parallel tumbling rolls having corrugated surfaces of friction material, means for rotating said rolls simultaneously and at equal high speeds with the upper halves of their surfaces moving away from each other, and a chain conveyer for the nuts to be blanched mounted to travel between and parallel with said rolls.

2. In a nut blanching machine, the combination of a pair of parallel tumbling rolls

having longitudinally grooved rubber surfaces, means for rotating said rolls simultaneously and at equal high speeds with the upper halves of their surfaces moving away from each other, and a chain conveyer for the nuts to be blanched mounted to travel between and parallel with said rolls.

3. In a nut blanching machine, the combination of a pair of parallel tumbling rolls having corrugated surfaces of friction material, means for rotating said rolls simultaneously in opposite directions at high speed, and an endless chain conveyer the upper lap of which is mounted to travel between and parallel with said rolls, said conveyer having spaced flights disposed at a right angle thereto and extending above the tops of the rolls.

4. In a nut blanching machine, the combination of a pair of parallel tumbling rolls having corrugated surfaces of friction material, means for rotating said rolls simultaneously in opposite directions at high speed, an endless chain conveyer mounted to travel between and parallel with said rolls, and a top wall of yieldable material overlying the space between said rolls.

5. In a nut blanching machine, the combination of a pair of parallel tumbling rolls having corrugated surfaces of friction material, means for rotating said rolls simultaneously in opposite directions at high speed, an endless chain conveyer mounted to travel between and parallel with said rolls, and a stationary brush having the free edge of its body of bristles overlying the space between said rolls.

6. In a nut blanching machine, the combination of a pair of parallel tumbling rolls having corrugated surfaces of friction material, means for rotating said rolls simultaneously in opposite directions at high speed,

an endless chain conveyer mounted to travel between and parallel with said rolls, a stationary brush having the free edge of its body of bristles overlying the space between said rolls, and spaced flights on said conveyer disposed at a right angle thereto and extending at their upper edges substantially into contact with the lower free edge of said brush.

7. In a nut blanching machine, the combination of a pair of parallel tumbling rolls, a conveyer for the nuts to be blanched mounted to travel between and parallel with said rolls, stationary side walls extending lengthwise of and above said rolls, and a top wall having a yieldable surface spanning the space between said side walls.

8. In a nut blanching machine, the combination of a pair of parallel tumbling rolls, a conveyer for the nuts to be blanched mounted to travel between and parallel with said rolls, stationary side walls extending lengthwise of and above said rolls, and a brush mounted above said rolls with the lower free edge of its body of bristles spanning the space between said side walls.

9. In a nut blanching machine, the combination of a pair of parallel tumbling rolls, a conveyer for the nuts to be blanched mounted to travel between and parallel with said rolls, stationary side walls extending lengthwise of and above said rolls, a brush mounted above said rolls with the lower free edge of its body of bristles spanning the space between the upper edges of said side walls, and spaced flights on said conveyer the upper edges of which extend substantially into contact with the lower free edge of said brush, and the side edges of which lie closely adjacent to the inner upper portions of said rolls and said side walls.

JOSEPH A. FRANKLIN.